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Published Writings of Arthur Holmes Howell (1872-1940)

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Published Writings of Arthur Holmes Howell (1872-1940)

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Published Writings of Arthur Holmes Howell (1872–1940)

By Hartley H. T. Jackson

This bibliography is being published at the suggestion of Dr. Francis Harper, who wrote to me on September 6, 1965, in part as follows: "Evelyn Preble Walter wrote me recently that she had turned over a MS Howell bibliography to his son, Elbert. Presumably, Preble had prepared it." In a second paragraph "Would you care to get hold of the MS from Elbert and see what you could do with it? It would be nice to publish for the sake of our old friend, A. H." At the time of the lamentable death of Arthur Howell on July 10, 1940, I was on inspectional biological field work in the Desert Game Range, Nevada. As Chief of the Section of Wildlife Surveys, with which Mr. Howell had been associated, I suggested to the Washington office that a bibliography be prepared and copies distributed to a few of Howell's associates. The bibliography was prepared by Miss Emma M. Charters and contained 88 titles. Typewritten and carbon copies were made, but the bibliography was never published or mimeographed. Thirty titles have been added to the original manuscript, and the present bibliography is believed to be fairly complete. Possibly, some early notes or abstracts have been missed.

Howell published few articles anonymously. Individual items in the "Comment and News" column of the *Journal of Mammalogy* may have been supplied to the Editor, but the assembling, writing, and editing of the entire column is accredited to Howell while he was editor of the Journal. His authorship is in nearly every case easily established. He never resorted to initials only, and never used a fictitious name. Various sources were pursued in locating Howell's papers, but by and large nearly all of them were in the private library of this bibliographer. The former "house organ" of the old Biological Survey, *The Survey*, vol. 1 (1920) to vol. 21 (1940) offered many clues or suggestions.

For assistance with this bibliography, I am grateful to Dr. Francis Harper, Mrs. Eugenia Langford, and Dr. Richard H. Manville. Miss Viola S. Schantz (Jour. Mammalogy, 21:385–388, 1940) published a biographical account of Arthur H. Howell.

Arthur H. Howell was the name that consistently appeared as the author of his publications. In the list of publications that follows, his name is not repeated for those of which he was the sole author. In the six cases of joint authorship, the names of authors are inserted within parentheses after the year of publication. The sequence of such names and the form in which each appeared in the original publication are preserved. In five of these publications, Howell was the senior author. In the 1902 paper on "A method of fixing the type in certain genera," the names of the eleven authors were arranged in alphabetical order, that of Howell being fifth.

The given names of eleven of the fifteen persons who collaborated with Howell in his six co-author publications were not printed in full. That omission is supplied in the following list:

J. A. Allen	Joel Asaph Allen
Thomas D. Burleigh	Thomas Dearborn Burleigh
Theo. Gill	Theodore Nicolas Gill
Ray P. Holland	Raymond Prunty Holland
Remington Kellogg	Arthur Remington Kellogg
C. Hart Merriam	Clinton Hart Merriam
Gerrit S. Miller, Jr.	Gerrit Smith Miller, Jr.
E. W. Nelson	Edward William Nelson
Henry Oldys	Henry Worthington Olds
Mary Rathbun	Mary Jane Rathbun
A. J. van Rossem	Adriaan Joseph van Rossem

The names, whether for a genus, subgenus, species, or subspecies, that Howell proposed as new are indicated by bold-faced type in parenthetical notes following the citations of the papers in which the names were first published. Howell described or "named" as new one genus, four subgenera, 14 species, and 94 subspecies, —a total of 113 new names. These were all mammalian except one new bird species and five new bird subspecies. He discovered his bird species at Cape Sable, Florida, in February 1918, and described it as *Thryospiza mirabilis* in January 1919. His last publication on birds appeared in July 1934, a joint authorship with Thomas D. Burleigh. His first eight papers (December 1888 to October 1901) were all on birds. At the time of his death (July 10, 1940), he was intensive in research on two projects: the mammals of Florida and a taxonomic revision of the North American tree squirrels.

The dates of publication assigned in this bibliography are believed to be accurate. Of the 118 publications cited, 83 are dated as to the day, 31 as to the month, and four only as to the year of publication. Of the 83 dated as to the day of actual publication, 78 were of easily determined date as announced in the publication. Of these, 39 were in the *Journal of Mammalogy*, 27 in the *Proceedings of the Biological*

Society of Washington, nine were North American Faunas, and three were Biological Survey Bulletins. Possibly, a more definite date could have been determined than some of the "month" and "year" dates of the 35 other publications had sufficient research been applied. Howell's publications appeared in 19 different outlets over a publication span of 56 years, of which 53 years were during his lifetime when 113 contributions had appeared in print. Five of Howell's publications appeared posthumously, two of which (1940 and 1941) he had personally submitted to the publisher and three (1942 and 1943) were manuscripts found among "the papers of the late Arthur H. Howell" and submitted to the publisher by Viola S. Schantz.

Four mammals and two birds, all subspecies, were named in honor of Arthur H. Howell. A chronological list follows:

Scalopus aquaticus howelli Jackson, February 2, 1914
Chordeiles minor howelli Oberholser, April 6, 1914
Passerherbulus maritimus howelli Griscom and Nichols, 1920
Ochotona princeps howelli Borell, 1931
Reithrodontomys mexicanus howelli Goodwin, 1932
Thomomys bottae howelli Goldman, 1936

Arthur H. Howell's published output, including six of joint authorship, consisted of 118 items covering about 2300 printed pages and 167 separate full page plates, or a total of about 2460 pages. The printed pages contained 192 text figures of which 140 were maps. Fifty-one of the 167 plates were in color. Fourteen individuals were with him in the publication of his six joint papers, ten of whom appeared as co-authors in the two-page year-1902 nomenclatorial article. Henry Oldys appeared in 1907, van Rossem in 1928, Burleigh in 1934, and Kellogg in 1938 in two "Comment and News" columns in the *Journal of Mammalogy*. In the case of joint papers, only a proportional part of the pages have been accredited to Howell, but the total deduction is only ten pages. Any reprintings of Howell's original publications that have appeared in other journals or in books have not been included in the total number of pages.

Howell's publications were almost exclusively on birds or mammals, or on persons or things relating to birds or mammals, a reflection of his chief interests in natural history and zoology. His publications might be classified roughly as follows: mammals, 55; birds, 37; nomenclature, 6; biography, 5; reviews, 6; general or miscellaneous, 9. Although Howell's publications on mammals (55) outnumbered his publications on birds (37) by 50 per cent, his

total pagination on birds (about 1175) out-numbered his pagination on mammals (about 1090) by nearly 10 per cent. This increase in number of pages may be accredited largely to his two monumental bird publications, *Florida Bird Life* (579 pages) and *Birds of Alabama* (384 pages). His largest and also most important mammal paper, Revision of the North American Ground Squirrels, contained 256 pages. Seven of the miscellaneous items were "Comment and News" columns in the *Journal of Mammalogy*.

He was a speaker of good voice and rather frequently talked to church, school, scout or party groups, presenting in a popular manner his natural history knowledge or the results of his investigations. His more technical talks were occasionally presented before such organizations as the Linnaean Society of New York, the American Ornithologists' Union, the American Society of Mammalogists, The Biological Society of Washington, and the Ecological Society of America. Abstracts of some of his technical talks have been published, and such as are known are listed in the bibliography.

Records indicate that Howell gave only one aerial talk, that one entitled "The Relations of Wild Life to the Forest" and broadcast April 25, 1928, from Station WWNC, Asheville, North Carolina, in a radio program for American Forest Week. A copy of this talk as spoken is in the files of the Bird and Mammal Laboratories of the U. S. Fish and Wildlife Service and is published posthumously as his 119th publication following the bibliography.

Bibliography

1888. Ornithological reminiscences. Ornithologist and Oologist 13(12):179–180. December.

1891. Capture of a glaucous gull at Long Island, N. Y. Ornithologist and Oologist 16(4):61. April.

1892. Brief notes from Long Island. Auk 9(3):306. July.

1893. On the occurrence of three rare birds on Long Island, N. Y. Auk 10(1):90. January

1894. Remarks upon birds observed on Long Island, N. Y. during 1892. Abstr. Proc. Linnaean Soc. New York 1894 (6):1.

1894. Rare birds on Long Island. Abstr. Proc. Linnaean Soc. New York 1894 (6):3.

1894. Notes on some Long Island birds. Auk 11(1):82–84. January.

1899. Notes on two rare birds from Long Island, N. Y. Auk 16:85. January.

1901. Revision of the skunks of the genus Chincha. U. S. Dept. Agric., Biol. Survey, No. Amer. Fauna 20:1–62, 8 pl. August 31. (*Chincha occidentalis* ***notata***, p. 36; *C. o.* ***major***, p. 37; *C.* ***platyrhina***, p. 89; ***Leucomitra***, subgen. nov., p. 39.)

1901. A preliminary list of the summer birds of Mount Mansfield, Vermont. Auk 18:337–347. October.

1902. The generic names of the North American skunks. Proc. Biol. Soc. Washington 15:1–9. February 18.

1902. (J. A. Allen, Outram Bangs, Barton Warren Evermann, Theo. Gill, Arthur H. Howell, David Starr Jordan, C. Hart Merriam, Gerrit S. Miller, Jr., E. W. Nelson, Mary Rathburn, and Oldfield Thomas). A method of fixing the type in certain genera. Science, N. S., 16 (394):114–115. July 18.

1902. Three new skunks of the genus Spilogale. Proc. Biol. Soc. Washington 15:1–9. December 6. (*Spilogale* ***tenuis***, p. 241; *S.* ***augustifrons***, p. 250; *S. a.* ***tropicalis***, p. 250.)

1905. Scott's sparrow in Colorado. Auk 22(2):210. April.

1906. The proper name for the white-backed skunk of Colorado. Proc. Biol. Soc. Washington 19:45. February 26.

1906. The proper name for the eastern skunk. Proc. Biol. Soc. Washington 19:45. February 26.

1906. The proper name for the striped muishond of South Africa. Proc. Biol. Soc. Washington 19:46. February 26.

1906. The generic name *Zorillo*. Proc. Biol. Soc. Washington 19:46. February 26.

1906. Revision of the skunks of the genus Spilogale. U. S. Dept. Agric., Biol. Survey, No. Amer. Fauna 26:1–55, 10 pl. November 24. (*Spilogale augustifrons* ***elata***, p. 27; *S.* ***microdon***, p. 34.)

1906. Birds that eat the cotton boll weevil, U. S. Dept. Agric., Biol. Survey Bull. 25:1–22. July.

1907. (Arthur H. Howell and Henry Oldys). The Bewick wren in the District of Columbia, with a description of its song. Auk 24:149–153. April.

1907. Another Connecticut warbler from Maine. Auk 24:222. April.

1907. The relation of birds to the cotton boll weevil. U. S. Dept. Agric., Biol. Survey Bull. 29:1–31, 6 text figs., 1 col. pl. October 10.

1908. Notes on diurnal migrations of bats. Proc. Biol. Soc. Washington 21: 35–38. January 23.

1908. Notes on the winter birds of northern Louisiana. Proc. Biol. Soc. Washington 21:119–124. April 11.

1908. Destruction of the cotton boll weevil by birds in winter. U. S. Dept. Agric., Biol. Survey Circ. 64:1–5. June 19.

1909. Description of a new bat from Nickajack Cave, Tennessee. Proc. Biol. Soc. Washington 22:45–47. March 10. (*Myotis* ***grisescens***, p. 46.)

1909. Notes on the summer birds of northern Georgia. Auk 26(2):192. April.

1909. Notes on the distribution of certain mammals in the southeastern United States. Proc. Biol. Soc. Washington 22:55–68. April 17.
1909. *Agelaius phoeniceus fortis* in Louisiana. Auk 26(2):192. April.
1910. Notes on the mammals of the middle Mississippi valley, with decription of a new woodrat. Proc. Biol. Soc. Washington 23:23–33. March 23. (*Neotoma floridana* ***illinoisensis***, p. 28.)
1910. Breeding records from southern Illinois. Auk 27(2):216. April.
1910. A semidomesticated warbler. Bird Lore 12:76. April.
1910. Notes on the summer birds of Kentucky and Tennessee. Auk 27(3): 295–304. July.
1910. Notes on the birds of the sunken lands of southeastern Missouri. Auk 27(3):381–384. July.
1911. Capture of *Sorex dispar* in West Virginia. Proc. Biol. Soc. Washington 24:98–99. May 15.
1911. Birds of Arkansas. U. S. Dept. Agric., Biol. Survey Bull. 38:1–100, 7 pl. (No. 1, a folded col. life zone map), 4 text maps. October 12.
1913. Description of a new weasel from Alabama. Proc. Biol. Soc. Washington 26:139–140. May 21. (*Mustela peninsulae* ***olivacea***, p. 139.)
1913. Description of two new birds from Alabama. Proc. Biol. Soc. Washington 26:199–202. October 23. (*Corvus brachyrhynchos* ***paulus***, p. 199; *Pipilo erythrophthalmus* ***canaster***, p. 202.)
1914. Ten new marmots from North America. Proc. Biol. Soc. Washington 27:13–18. February 2. (*Marmota monax* ***rufescens***, p. 13; *M. m.* ***preblorum***, p. 14; *M. flaviventer* ***parvula***, p. 14; *M. f.* ***nosophora***, p. 15; *M. f.* ***luteola***, p. 15; *M. f.* ***warreni***, p. 16; *M. f.* ***obscura***, p. 16; *M. caligata* ***cascadensis***, p. 17; *M. c.* ***nivaria***, p. 17; *M. c.* ***sheldoni***, p. 18.)
1914. Notes on the skunks of Indiana, with a correction. Proc. Biol. Soc. Washington 27:100. May 11.
1914. Revision of the American harvest mice (Genus *Reithrodontomys*). U. S. Dept. Agric., Biol. Survey, No. Amer. Fauna 36:1–97, 6 text maps, 7 pl. June 5. (*Reithrodontomys megalotis* ***nigrescens***, p. 32; *R.* ***amoles***, p. 40; *R. fulvescens* ***chiapensis***, p. 53; *R. f.* ***nelsoni***, p. 53; *R. f.* ***mustelinus***, p. 54; *R. rufescens* ***luteolus***, p. 57; *R.* ***alleni***, p. 59; ***Aporodon***, subgen. nov., p. 63.)
1915. Revision of the American marmots. U. S. Dept. Agric., Biol. Survey, No. Amer. Fauna 37:1–80, 3 text maps, 15 pl. April 7. (*Marmota monax* ***petrensis***, p. 33; *M. flaviventris* ***sierrae***, p. 43.)
1915. Descriptions of a new genus and seven new races of flying squirrels. Proc. Biol. Soc. Washington 28:109–114. May 27. (***Eoglaucomys*** genus nov., p. 109; *Glaucomys volans* ***saturatus***, p. 110; *G. v.* ***texensis***, p. 110; *G. sabrinus* ***canescens***, p. 111; *G. s.* ***columbiensis***, p. 111; *G. s.* ***latipes***, p. 112; *G. s.* ***flaviventris***, p. 112; *G.* ***bullatus***, p. 113.)
1916. Description of a new pine mouse from Florida. Proc. Biol. Soc. Washington 29:83–84. April 4. (*Pitymys* ***parvulus***, p. 83.)
1917. Description of a new race of Say's ground squirrel from Wyoming. Proc. Biol. Soc. Washington 30:105–106. May 23. (*Callospermophilus lateralis* ***caryi***, p. 105.)
1918. Revision of the American flying squirrels. U. S. Dept. Agric., Biol. Survey, No. Amer. Fauna 44:1–64, 4 text maps, 7 pl. June 13.
1918. A Crested Flycatcher injured by swallowing a grasshopper. Auk 35 (3):354–355. July.
1919. Description of a new seaside sparrow from Florida. Auk 36(1):86–87. January. (*Thryospiza* ***mirabilis***, p. 86.)
1919. Descriptions of nine new North American pikas. Proc. Biol. Soc. Washington 32:105–110. May 20. (*Ochotona princeps* ***lutescens***, p. 105; *O. uinta* ***ventorum***, p. 106; *O. u.* ***lemhi***, p. 106; *O. u.* ***nevadensis***, p. 107; *O. saxatilis* ***incana***, p. 107; *O. fenisex* ***brunnescens***, p. 108; *O. f.* ***fumosa***, p. 109; *O. schisticeps* ***jewetti***, p. 109; *O. s.* ***fuscipes***, p. 110.)
1919. Notes on the fox squirrels of southeastern United States, with a description of a new form from Florida. Jour. Mammalogy 1(1):36–38. November 28. (*Sciurus niger* ***avicennia***, p. 37.)

1920. Description of a new race of the Florida water-rat (*Neofiber alleni*). Jour. Mammalogy 1(2):79–80. March 2. (*Neofiber alleni* ***nigrescens***, p. 79.)
1920. The Florida spotted skunk as an acrobat. Jour. Mammalogy 1(2):88. March 2.
1920. Death of Thomas M. Owen. Jour. Mammalogy 1(4):187. August 24.
1920. Description of a new species of a beach mouse from Florida. Jour. Mammalogy 1(5):237–240, 1 text map. December 4. (*Peromyscus* ***leucocephalus***, p. 239.)
1920. Description of a new chipmunk from Glacier National Park, Montana. Proc. Biol. Soc. Washington 33:91–92. December 30. (*Eutamias* ***ruficaudus***, p. 91.)
1921. A list of the birds of Royal Palm Hammock, Florida. Auk 38(2): 250–263. April.
1921. A biological survey of Alabama. I. Physiography and life zones. II. The mammals. U. S. Dept. Agric., Biol. Survey, No. Amer. Fauna 45: 1–88, 10 text maps, 11 pl. (No. 1 folding colored life zone map). October 28.
1922. The relationship and distribution of American chipmunks. Jour. Washington Acad. Sci. 12(12):298. June 19. Abstract of paper delivered at meeting of Biological Society of Washington on February 4, 1922.
1922. [Notes on the mating of ducks in Missouri.] Pp. 14–15 in: Ray P. Holland, Spring duck shooting. Bull. Amer. Game Protective Asso. 11(3):13–15. July. (Some of the information is conversational and other parts are direct quotes.)
1922. Diagnoses of seven new chipmunks of the genus *Eutamias*, with a list of the American species. Jour. Mammalogy 3(3):178–185. August 4. (*Eutamias minimus* ***arizonensis***, p. 178; *E. amoenus* ***vallicola***, p. 179; *E. ruficaudus* ***simulans***, p. 179; *E. bulleri* ***solivagus***, p. 179; *E. speciosus* ***sequoiensis***, p. 180; *E. townsendi* ***siskiyou***, p. 180; *E. t.* ***alleni***, p. 181.)
1923. Hibernating habits of chipmunks. Jour. Mammalogy 4(2):135. May 9.
1923. [Obituary notice of Rev. James Herbert Langille.] Auk 40(3):572–573. July.
1924. Birds of Alabama. Dept. of Game and Fisheries of Alabama, 800:1–384, 7 pl., 31 text fig. (7 maps). May. 2nd edition, 1928.
1924. Revision of the American pikas. U. S. Dept. Agric., Biol. Survey, No. Amer. Fauna 47:1–57, 6 pl., 4 text maps. September 23. (*Ochotona princeps* ***brooksi***, p. 30; *O. schisticeps* ***goldmani***, p. 40.)
1925. Preliminary descriptions of five new chipmunks from North America. Jour. Mammalogy 6(1):51–54. February 9. (*Tamias striatus* ***fisheri***, p. 51; *Eutamias minimus* ***griscescens***, p. 52; *E. m.* ***confinis***, p. 52; *E. m.* ***jacksoni***, p. 53; *E. m.* ***ochraceus***, p. 54.)
1926. The Point Barrow gull in Missouri—an addition to the state list. Auk 43(1):87. January.
1927. The rice rat in Maryland. Jour. Mammalogy 8(4):312. November 11.
1928. (Arthur H. Howell and A. J. van Rossem). A study of the red-winged blackbirds of southeastern United States. Auk 45(2):155–163. April. (*Agelaius phoeniceus* ***littoralis***, p. 157; *A. p.* ***wearnsi***, p. 159.)
1928. Descriptions of six new North American ground squirrels. Proc. Biol. Soc. Washington 41:211–214. December 18. (*Citellus townsendii* ***brunneus***, p. 211; *C. elegans* ***nevadensis***, p. 211; *C. columbianus* ***ruficaudus***, p. 212; *C. spilosoma* ***pallescens***, p. 212; *C. tridecemlineatus* ***arenicola***, p. 213; *C. t.* ***monticola***, p. 214.)
1929. Description of a new red squirrel from North Carolina. Jour. Mammalogy 10(1):75–76. February 11. (*Sciurus hudsonicus* ***abieticola***, p. 75.)
1929. Animal life in a North Carolina forest. Jour. Washington Acad. Sci. 19(5):104. May. Author's abstract of paper delivered at meeting of Biological Society of Washington on October 20, 1928.
1929. Revision of the American chipmunks. U. S. Dept. Agric., Biol. Survey, No. Amer. Fauna 52:1–157, pl. 10, 9 text maps. November 30.
1929. Florida's mammals. Nature Mag. 14(6):338–340, 378–379, 9 illus. December.

1930. Description of a new subspecies of the prairie warbler, with remarks on two other unrecognized Florida races. Auk 47(1):41–43. January. (*Dendroica discolor* ***paludicola***, a synonym of *D. d. collinsi* H. H. Bailey.)

1930. Five additions to the birds of Florida. Auk 47:96–97. January.

1930. A naturalist's cruise of the Gulf coast. Florida Naturalist 3:29–37. January.

1931. Preliminary descriptions of four new North American ground squirrels. Jour. Mammalogy 12(2):160–162. May 14. (*Citellus beecheyi* ***parvulus***, p. 160; *Callospermophilus chrysodeirus* ***connectens***, p. 161; *G. c.* ***mitratus***, p. 161; *C. leucurus* ***pennipes***, p. 162.)

1931. Range of Allegheny cliff rat in the southern Appalachians. Jour. Mammalogy 12(2):168–169. May 14.

1932. Florida bird life. Florida Dept. Game and Freshwater Fish, in cooperation with Bureau of Biol. Survey, U. S. Dept. Agric.:1–XXIV, 1–579, 58 pl. (37 colored), 1 folding map, 72 text maps. January 8.

1932. Notes on range of the eastern chipmunks in Ohio, Indiana, and Quebec. Jour. Mammalogy 13(2):166–167. May 11.

1932. Descriptions of two new harvest mice from Honduras. Proc. Biol. Soc. Washington 45:125–126. July 30. (*Reithrodontomys mexicanus* ***lucifrons***, p. 125; *R. m.* ***minusculus***, p. 125.)

1933. The Florida wood rat in the mountains of Georgia and North Carolina—with a correction. Jour. Mammalogy 14(4):371–372. November 13. (Corrected recording as *Neotoma pennsylvanica* a specimen of *Neotoma floridana floridana* taken at Highlands, North Carolina: Jour. Mammalogy 12(2):168, 1931.)

1934. Description of a new race of flying squirrel from Alaska. Jour. Mammalogy 15(1):64. February 15. (*Glaucomys sabrinus* ***griseifrons***.)

1934. The type locality of Pitymys parvulus. Jour Mammalogy 15(1):72. February 15. (Fixes type locality as the Lynne Planting Station of the U. S. Forest Service, near the town of Lynne, Marion County, Florida.)

1934. (Arthur H. Howell and Thomas D. Burleigh.) Notes on the occurrence of certain birds in Princess Anne County, Virginia. Auk 51(2):249–250, April; (3):393–394, July.

1934. [Review of] Vernon Bailey, Cave life of Kentucky, mainly in the Mammoth Cave region (1933). Jour. Mammalogy 15(2):163. May 15.

1934. Description of a new subspecies of the Florida wood rat. Proc. Acad. Nat. Sci. Philadelphia 86:403–404. October 15. (*Neotoma floridana* ***haematoreia***, p. 403.)

1935. [Review of] George Gaylord Simpson, Attending marvels, a Patagonian journal (1934). Jour. Mammalogy 16(1):74. February 14.

1935. The harvest mice of the San Luis Valley, Colorado. Jour. Mammalogy 16(2):143–144. May 15. (*Reithrodontomys megalotis* ***caryi***, p. 143.)

1936. Description of a new red squirrel from Isle Royale, Michigan. Occas. Papers Mus. Zool. Univ. Michigan, No. 328:1–2. July 7. (*Tamiasciurus* ***regalis***, p. 1.)

1936. Recent additions to the list of Florida birds. Florida Nat. 9(4):82–84. July.

1936. Descriptions of three new red squirrels (Tamiasciurus) from North America. Proc. Biol. Soc. Washington 49:133–136. August 22. (*Tamiasciurus hudsonicus* ***preblei***, p. 133; *T. h.* ***columbiensis***, p. 135; *T. h.* ***kenaiensis***, p. 136.)

1936. A revision of the American Arctic hares. Jour. Mammalogy 17(4):315–337, 4 fig. (1 map). November 16.

1936. A reconnaissance of the summer bird life of Georgia. Oriole (Atlanta) 1(4):29–32. December.

1937. A simple method of saving small mammals in the field. Jour. Mammalogy 18(1):95. February 11.

1938. Revision of the North American ground squirrels, with a classification of the North American *Sciuridae*. U. S. Dept. Agric., Biol. Surv., No. Amer. Fauna 56:1–256, pls. 32 (11 colored), text maps 20. May 18. (***Poliocitellus*** *for Citellus franklinii*, p. 42; ***Notocitellus*** for *C. annulatus*, p. 44; *Citellus* ***washingtoni***, p. 69; *C. w.* ***washingtoni***, p. 69; *C. w.* ***loringi***, p. 71; *C. beecheyi* ***sierrae***, p. 153.)

1938. (Arthur H. Howell and Remington Kellogg). Comment and News. Jour. Mammalogy 19(3):399. August 18.

1938. (Arthur H. Howell and Remington Kellogg). Comment and News. Jour. Mammalogy 19(4):525–526. November 14.

1939. Comment and News. Jour. Mammalogy 20(1):134–137. February 15.

1939. Earl E. Hoover. Jour. Mammalogy 20(2):282. May 15.

1939. Comment and News. Jour. Mammalogy 20(2):285–286. May 15.

1939. Descriptions of five new mammals from Florida. Jour. Mammalogy 20 (3):363–365. August 14. (*Scalopus aquaticus* ***bassi***, p. 363; *Peromyscus polionotus* ***decoloratus***, p. 363; *P. p.* ***peninsularis***, p. 364; *P. gossypinus* ***restrictus***, p. 364; *Sylvilagus floridanus* ***anmophilus***, p. 365.)

1939. [Review of] Glover Morrill Allen, Bats (1939). Jour. Mamalogy 20(3): 388. August 14.

1939. [Review of] William B. Davis, The mammals of Idaho (April 5, 1939). Jour. Mammalogy 20(3):389–390. August 14.

1939. Comment and News. Jour. Mammalogy 20(3):407. August 14.

1939. Description of a new subspecies of the golden mouse. Jour. Mammalogy 20(4):498. November 14. (*Peromyscus nuttalli* ***lewisi***, p. 498.)

1939. [Review of] Ann Haven Morgan, Field book of animals in winter (1939). Jour. Mammalogy 20(4):509. November 14.

1939. Edmund Heller. Jour. Mammalogy 20(4):529. November 14.

1939. Comment and News. Jour. Mammalogy 20(4):530. November 14.

1940. Comment and News. Jour. Mammalogy 21(1):117–118. February 15.

1940. Brown bear killed on St. Lawrence Island. Jour. Mammalogy 21(2): 216. May 16.

1940. Wilfred August Welter. Jour. Mammalogy 21(2):245. May 16.

1940. A new race of the harvest mouse (Reithrodontomys) from Virginia. Jour. Mammalogy 21(3):346. August 13. (*R. humilis* ***virginianus***.)

1941. [Review of] W. J. Hamilton, Jr., American mammals: their lives, habits, and economic relations (1939). Jour. Mammalogy 22(1):95–96. February 14.

1942. A new red squirrel from North Dakota. Proc. Biol. Soc. Washington 55:13–14. May 12. (Posthumous. Howell manuscript submitted to publisher by Viola S. Schantz.) (*Tamiasciurus hudsonicus* ***pallescens***, p. 13.)

1943. A new red squirrel from Minnesota. Proc. Biol. Soc. Washington 56:67–68. June 16. (Posthumous. The first paragraph reads: "This description of a previously unrecognized subspecies of a red squirrel was found among the papers of the late Arthur H. Howell. It was prepared by him in connection with his revision of the red squirrels of North America, which was left uncompleted by his untimely death.—Viola S. Schantz.") (*Tamiasciurus hudsonicus* ***murii***, p. 67; now considered a synonym of *T. h. minnesota* (J. A. Allen), 1899.)

1943. Two new cotton rats from Florida. Proc. Biol. Soc. Washington 56:73–76. June 16. (Posthumous.) (*Sigmodon hispidus* ***floridanus***, p. 73; *S. h.* ***insulicola***, p. 74.) (Prefatory note after author's name reads "These new cotton rat descriptions were found with the late Arthur H. Howell's partly completed manuscript on Florida mammals.—Viola S. Schantz.")

*Radio Talks on Forestry**

THE RELATIONS OF WILD LIFE TO THE FOREST

By

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(On field assignment in cooperation with the Appalachian Forest Experiment Station of the Forest Service, U. S. Department of Agriculture)

In connection with the observance of American Forest Week it is appropriate to consider briefly the habits of the animals and birds that inhabit the forests. Both birds and mammals (or animals, as they are commonly termed) exert an important influence on the life and development of the forest—some for good, and some for ill. Birds, as a rule, are more conspicuous than mammals, are more easily studied, and contribute much by their beautiful forms and their interesting songs to the attractiveness of the woodlands.

The great majority of forest birds are believed to be beneficial in their relation to the forest growth. Indeed, some investigators have contended that without the aid of birds in controlling destructive insects, many species of vegetable life would disappear from the earth.

The forests are inhabited by many different kinds of birds, each of which plays a part in keeping within bounds the swarms of insects which infest the trees. Warblers of many species, vireos, tanagers, and flycatchers, live among the upper branches scanning each leaf with their keen eyes for caterpillars and other insects which attack the foliage; woodpeckers, nuthatches, and creepers devote their attention to the trunks and limbs of the trees, capturing bark beetles and wood-boring insects; wrens, thrushes, ovenbirds and other ground dwelling species search the floor of the forest where they find beetles, larvae of moths, ants, other insects and spiders.

These statements concerning the beneficial habits of birds in general are not based on guesswork or even alone on observation in the woods, but upon the careful examination by experts of the contents of thousands of birds' stomachs, which the United States Biological Survey has been accumulating for many years. Reports

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on the food habits of many groups of birds have been issued by the Survey, and others are now in preparation.

A few kinds of birds have habits more or less detrimental to the life of the forest. Jays, crows, and wild turkeys eat acorns, chestnuts, and beech nuts, but on the other hand they sometimes aid in the dissemination of these seeds through accidental dropping of the nuts at a distance from their place of origin.

Several species of birds—notably purple finches—feed in early spring on the buds and blossoms of forest trees, but the damage to the life of the trees from such pruning is insignificant.

Of the various woodpeckers that live in the forest, nearly all are distinctly beneficial. The little downy woodpecker and its larger cousin the hairy woodpecker, both of which are commonly but erroneously called "sapsuckers," render important service by searching over the bark of the trees for beetles and wood-boring larvae, which they dig out of the wood with great dexterity.

The big pileated woodpecker, or logcock, devotes his attention to the larger limbs that show signs of decay, ripping off large strips of bark and rotten wood in his search for grubs, beetles, ants, etc. The flicker seeks its food nearer the ground, digging into rotten stubs after ants which form his favorite food.

The only woodpecker in eastern United States which does serious damage to forest trees is the yellow-bellied sapsucker. This species is found in summer only in the northern states and sparingly in the higher Alleghenies, but in fall the birds migrate into the southern states and remain during the winter. This is a true sapsucker, for he has the habit, especially in spring, of puncturing certain trees with a series of deep holes, forming a ring around the trunk, and regularly visiting these punctures to drink the sap flowing from them. He also digs deep into the wood to secure some of the cambium or inner bark, and in doing so frequently injures the tree so seriously that it is stunted and sometimes killed. Of course the sapsucker eats also a considerable number of injurious insects, but this hardly makes up for the damage he does to the trees; the deep punctures which he makes produce checks and flaws in the finished lumber, which reduces its value in the market. This is not the case, however, with the comparatively shallow punctures made by the other forest woodpeckers upon sound trees.

The sapsucker is about the size of the hairy woodpecker, has a red crown, a red throat, a black patch on the breast and yellowish underparts.

Mammals inhabiting the forests include mice of several species, wood rats, shrews, moles, pocket gophers, chipmunks, squirrels, rabbits, porcupines, deer, and various carnivorous animals, such as skunks, possums, raccoons, weasels, mink, foxes, wildcats, and bears.

Of these the rodents, or gnawing animals, are likely to be the most injurious, while the carnivores are in general beneficial by reason of their control of the smaller destructive species of rodents. Skunks are especially fond of insects and for this reason should be protected. Weasels, foxes, and wildcats are useful in keeping down the population of mice, rats, chipmunks, and squirrels. Settlement of a region results in a decrease of the carnivores and a consequent increase of destructive rodents. The exact nature of the influence exerted on the forest by the rodents is not well known and considerable research is necessary before we can accurately appraise the economic status of the various species. In general, however, it may be stated that mice, chipmunks, and squirrels consume large quantities of acorns, chestnuts, hickory nuts, beechnuts, walnuts, and smaller seeds, such as pine, spruce, poplar, and maple. Mice and chipmunks are particularly destructive to seed beds and replanting areas, and where these rodents are abundant, it is often almost impossible to secure a satisfactory growth of seedlings without some measure of control of the seed-eating mammals. On the other hand, squirrels and chipmunks aid in the dissemination of nut and cone bearing trees through their habit of storing quantities of nuts and cones for use in winter and spring.

Gray squirrels bury many nuts in the forest floor, some of which they neglect to dig up again, and these may sprout and form trees. Red squirrels, or pine squirrels, regularly store large quantities of pine, fir, and spruce cones in their caches, which furnish a well-recognized source of seed used by foresters for replanting purposes. These hoards average about two bushels in bulk, but stores have been found containing as much as 16 bushels of pine cones.

Chipmunks have a similar habit, storing quantities of acorns, chestnuts, and beechnuts in their dens for winter use, but this method must be counted as destructive, for any surplus usually rots.

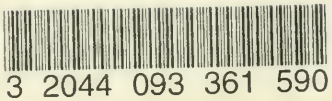
Porcupines, especially in the western states, do serious damage by gnawing the bark of forest trees. Deer, where abundant, are likely to damage young forest growth seriously, biting off the terminal buds of small saplings, especially yellow poplar, of which they seem to be fond. They also consume a considerable share of the acorn and chestnut crop in the fall. During late winter, particularly in

northern forests where snow is deep, they browse extensively on the lower limbs of forest trees and on the young saplings. Whenever they become abnormally abundant, as has been the case recently on the Kaibab Forest in Arizona, they destroy all vegetation as high as they can reach.

From this brief account of the forest inhabitants it is plain that the lives of the birds and mammals are very intimately related to the development of the trees; but we should be slow to condemn any particular species as wholly destructive until we have made a thorough study of its habits.

From the standpoint of the sportsman, the recreationist, and the nature lover, the forest can hardly contain too many of the attractive forms of wild life; but the practical forester is desirous of knowing how many individuals and which species of birds and mammals will contribute to the highest development of the valuable forest trees.

Research along these lines is now being inaugurated by the Biological Survey, in cooperation with the Forest Service, and it is expected that within a few years we may be in possession of much more complete and accurate information as to the relation of wild life to the forest.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